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CONCHOECIA CONVEXA, NEW SPECIES OF HALOCYPRID OSTRACOD FROM THE CARIBBEAN SEA AND GULF OF MEXICO[1]

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While examining the halocyprid ostracods from zooplankton samples collected in the Caribbean Sea and Gulf of Mexico, several specimens of a new species of *Conchoecia* were noted. Most of the specimens were collected by Dr. Harding B. Owre Michel on three cruises of the *Pillsbury* in the Caribbean Sea and Gulf of Mexico, but several were collected by Dr. Fernando Cervigon at two of his plankton stations off the north coast of Venezuela. Figure 1 shows the station localities where *Conchoecia convexa*, n. sp., was noted. Table 1 lists the specimens with their station localities and depth of tow. Unless specified otherwise the tows were horizontal. Most of the specimens were caught at ca. 500–700-m depths. I am deeply indebted to Dr. Michel and Dr. Cervigon for the privilege of examining the ostracods in their samples.

Conchoecia convexa, new species
Figs. 2–5

Holotype.—Male, 1.4 mm long by 0.6 mm high. One slide, deposited in the National Museum of Natural History, Smithsonian Institution (USNM 169065). From Cruise P-6803, Station 10, vertical tow, depth of capture unknown. Locality: 27°30′N, 87°10′W in the Gulf of Mexico.

Paratypes.—Male, 1.4 mm long, on two slides, from 635-m depth at 10°25′N, 80°55′W (Cruise P-6811, Station 9), USNM 169066. Female, 1.57 mm long, on one slide, from 665–888-m depths at 13°30′N, 62°50′W (Cruise P-6911, Station 6), 169067. Female, 1.55 mm long, on one slide, from 1,040-m depth at 15°00′N, 62°00′W (Cruise P-6911, Station 3), USNM 169068. All from the Caribbean Sea.

Etymology.—The specific name is derived from the Latin "convexus," meaning arched, protuberant, and refers to the rounded posterior margin of the shell.

Description of male (Figs. 2–3).—Length range: 1.35–1.40 mm.

Shell (Fig. 2a, b): Height of shell ca. 43% of length. Anterior margin rounded, ventral margin slightly rounded, posterior margin rounded to posterodorsal corner (Figs. 2a, 3e), rostrum rounded in ventral view (Fig. 2b). Right asymmetrical gland moved ca. ⅓ of the way up the posterior margin, medial glands present on both shells just below the rounded posterodorsal corner (Fig. 3e); left asymmetrical gland moved forward on the dorsal

Fig. 1. Station locations for *Conchoecia convexa* in the Gulf of Mexico and the Caribbean Sea.

margin ca. 25% of the total length. Shoulder vaults rounded. No sculpturing visible on shell.

First antenna (Fig. 2f, g–i): Frontal organ extends to just beyond the distal end of the 1st antenna. In ventral view on the capitulum there are 2 lines of long fine hairs running longitudinally along the ventral surface over the proximal half. Dorsally there are many long fine hairs on the proximal half, barely visible, that are somewhat exaggerated in the oblique dorsal view shown in Figure 2i. The armature of the 1st antenna consists of 2 rows of 18–19 alternating teeth on the principal seta; the proximal secondary seta has a double row of spinules and distal to these 2 or 3 single spinules, placed opposite the distal end of the tooth row of the principal seta (Fig. 2g). The distal secondary seta is bare. The proximal filament is about as long as the 1st antenna, with a small caecum near its base (Fig. 2h), the distal filament quite short. The secondary setae are almost as long as the principal seta (Fig. 2f).

Second antenna (Fig. 2c–e): The 1st segment of the exopodite is ⅓ the length of the shaft. The 2 bristles on the 1st segment of the endopodite

Table 1. Station locations and number of specimens of *Conchoecia convexa* recorded, with depth of tow.

Specimens	Station Location	Depth of tow (m)
1 ♂	P-6803, Sta. 10: 27°30′N, 87°10′W	Vertical
1 ♂	P-6803, Sta. 11: 25°59′N, 86°11′W	580
juv. ♀	P-6803, Sta. 12: 24°21′N, 86°12′W	550
1 ♀	P-6803, Sta. 13: 22°45′N, 86°05′W	500
juv. ♀	P-6803, Sta. 15: 19°30′N, 87°00′W	400
2 ♀♀	P-6803, Sta. 21: 18°30′N, 82°00′W	Vertical
juv. ♀	P-6803, Sta. 24: 21°40.1′N, 85°50.5′W	730
1 ♀	P-6811, Sta. 4: 14°10′N, 76°34′W	550
1 ♀	P-6811, Sta. 5: 11°45.5′N, 76°49.8′W	500
1 ♂	P-6811, Sta. 6: 09°50′N, 76°58′W	720
juv. ♀	P-6811, Sta. 7: 08°56′N, 77°07′W	500
2 ♂♂	P-6811, Sta. 9: 10°25′N, 80°55′W	635
1 ♀	P-6911, Sta. 3: 15°00′N, 62°00′W	1,040
2 ♀♀	P-6911, Sta. 6: 13°30′N, 62°50′W	665–888
1 ♀	Cervigon Sta. 63: 11°14′N, 65°00′W	1,200
juv. ♀	Cervigon Sta. 76: 11°45′N, 66°56′W	1,000–0
1 ♂	Cervigon Sta. 76: 11°45′N, 66°56′W	1,000–0
1 ♀	Cervigon Sta. 76: 11°45′N, 66°56′W	800–0
juv. ♀	Cervigon Sta. 76: 11°45′N, 66°56′W	1,200–0

stand straight, the larger and more distal bristle bearing long hairs distally. The right clasping organ is strongly bent, with a small knob on the inner side near the base (Fig. 2e); the left clasper is smaller and straight (Fig. 2d). The 3 filaments of the distal segment of the endopodite are equal in length, 36–37% the length of the longer of the 2 setae; the shorter seta is 72–73% the length of the longer, which is ca. 0.6 mm long (Fig. 2c).

Mandible (Fig. 3a, d): The incisor surface of the basale has 8 teeth of varying size. There are 4 setae near the distal end of the basale, and 4 setae, 2 of which are tiny, near the articulation with the 1st endopodite segment, which has a total of 4 setae. The 2nd segment of the endopodite bears 5 setae, and the distal segment 2 longer claw-like setae and 5 small setae; the distal segment also has a semi-circlet of hairs near the distal end. The distal tooth row of the coxale has ca. 9 large teeth, the 2nd tooth row ca. 18 tiny teeth, and the inner row ca. 5 distinguishable teeth of which 2 are large; there are also clusters of spines.

Maxilla (Figs. 2k, 3f): The 1st segment of the endopodite has a total of 10 setae (6 anterior, 1 lateral, and 3 posterior), and some spinules at the distal end, the distal segment 2 claws and 3 setae. The coxal and precoxal endites consist of ca. 9 and 13–14 large stiff bristles.

Fifth limb (Fig. 3b): The protopodite and endopodite have a total of

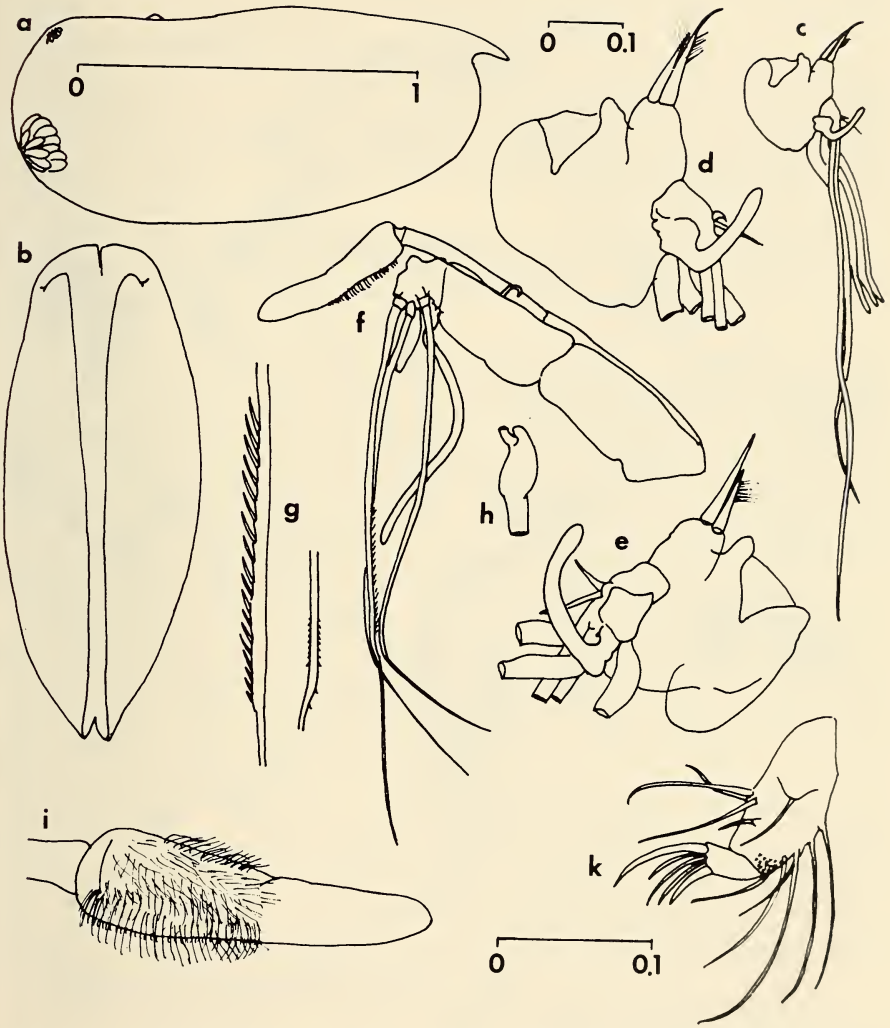

Fig. 2. *Conchoecia convexa*, male: a and b, Lateral and ventral views of shell; c, Endopodite of left 2nd antenna; d, Endopodite of left 2nd antenna, setae and filaments cut off; e, Endopodite of right 2nd antenna, setae and filaments cut off; f, Frontal organ and 1st antenna; g, Armature of principal seta of 1st antenna; h, Proximal section of proximal filament of 1st antenna; i, Oblique dorsal view of capitulum of frontal organ; k, Endopodite of maxilla. Scale on a for a and b, at top for c and f, at bottom right for d, e, g–k. Scales in mm.

Fig. 3. *Conchoecia convexa*, male: a, Molar and incisor surfaces of basale and coxale of mandible; b, Fifth limb; c, Sixth limb; d, Mandible; e, Posterodorsal corner and part of right posterior margin of shell; f, Coxal and precoxal endites; g, Furca; h, Penis. Scale at top for c–e, at bottom for a, b, f–h. Scales in mm.

13 setae, 5 plumose. The 1st segment of the exopodite has 11 setae, and the distal segment the 2 claw-like setae and a short bare seta. The epipodal appendage has 3 groups of 4-5-4 long plumose setae.

Sixth limb (Fig. 3c): The protopodite and 1st segment of the exopodite have 8 tiny plumose setae and a short dorsal seta, the 2nd segment 1 tiny seta, the 3rd 2 tiny setae, and the distal segment the usual 3 long plumose setae. The epipodial appendage has 3 groups of 5-5-6 long plumose setae, plus 1 tiny seta.

Caudal furca (Fig. 3g): The 1st claw is exceptionally long, and the 4th and 5th claws are noticeably curved. There is no single unpaired seta.

Penis (Fig. 3h): This is long, slim, bluntly rounded at the tip, and has 5 oblique muscles.

Description of female (Figs. 4–5).—Length range: 1.50–1.70 mm long.

Shell (Fig. 4a–c): The height of the shell is 41–44% of length. The shell is recognizably similar to the male's, although the dorsal and ventral margins are straighter, and the medial glands are lacking from the posterior margin near the posterodorsal corner. The shell is narrow in ventral view (Fig. 4c) and the shoulder vaults are rounded. The asymmetrical glands are placed as in the male shell, the right one moved dorsally on the posterior margin, the left one moved anteriorly on the dorsal margin.

First antenna (Fig. 4d): The frontal organ is unsegmented and extends well beyond the distal end of the 1st antenna; the capitulum is rounded with a slight point at the tip and has a few spinules on the distal ventral surface. The armature of the principal seta consists of small spinules down the posterior surface distal to the 4 filaments, and a few spinules on the anterior surface.

Second antenna (Fig. 4e, f): As in the male the 1st segment of the exopodite is ⅓ the length of the shaft. The 2 bristles of the 1st segment of the endopodite stand straight as in the male, but appear to be bare of spinules or hairs. The 3 filaments of the distal segment of the endopodite are similar in length and only slightly shorter than the shorter of the 2 longer setae. The longer seta bears a few spinules distally.

Mandible (Fig. 4g–i): This is similar to the male's, although only 1 bare seta was found on the basale near the articulation with the 1st endopodite segment, and the dorsal seta on the 1st endopodite segment is bare, not plumose as in the male.

Maxilla (Fig. 5b, c): This is also similar to the male's.

Fifth limb (Fig. 5a): This is essentially similar to the male's, but the 2nd exopodite segment has 4 short setae instead of 3.

Sixth limb (Fig. 5d): The protopodite and 1st exopodite segment have the same number of setae as in the male, but the 8 plumose setae are larger, and the setae of the 2nd and 3rd segments are larger, rather than vestigial, as

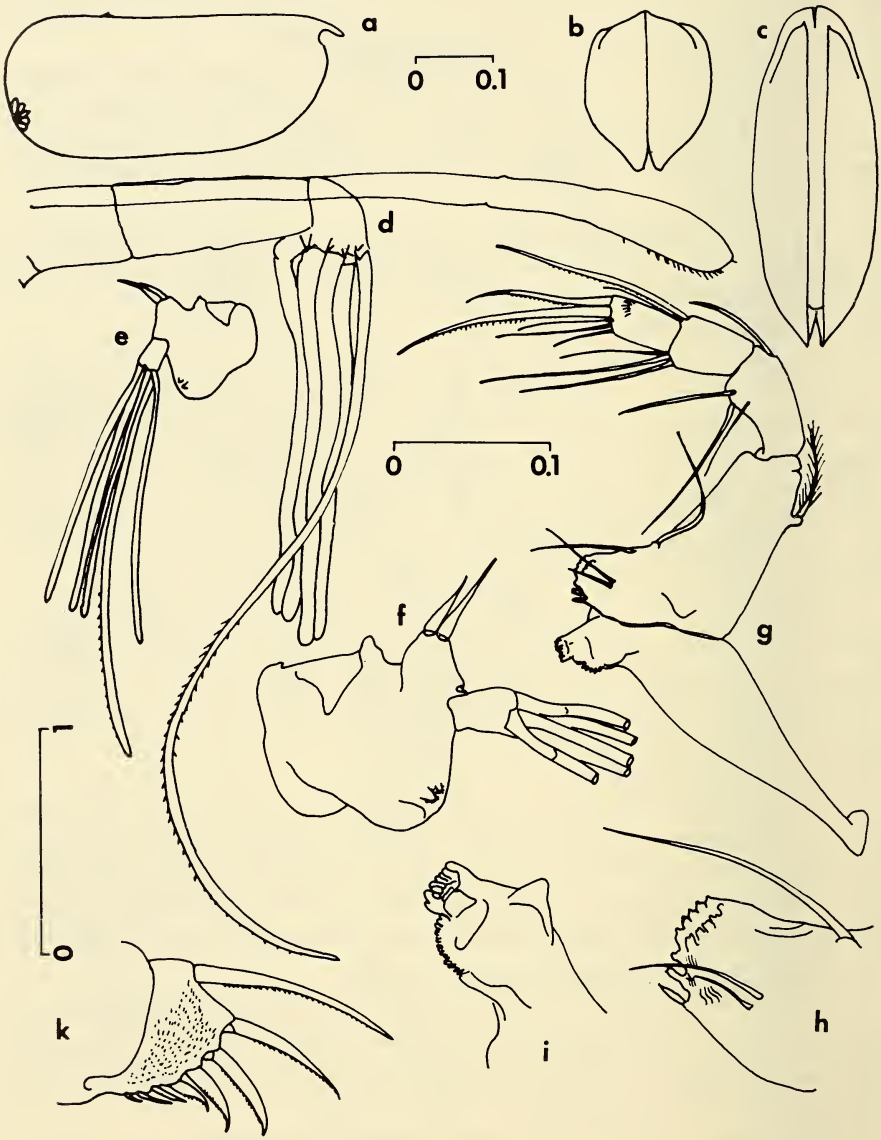

Fig. 4. *Conchoecia convexa*, female: a–c, Lateral, posterior, and ventral views of shell; d, Frontal organ and 1st antenna; e, Endopodite of 2nd antenna; f, Endopodite of 2nd antenna, setae and filaments cut off; g, Mandible; h, Incisor surface of basale of mandible; i, Incisor and molar surface of coxale; k, Furca. Scale on lower left margin for a–c, at top for e, g, and k, at center for d, f, h and i. Scales in mm.

Fig. 5. *Conchoecia convexa*, a–e, female: a, Fifth limb; b, Coxal and precoxal endites; c, Endopodite of maxilla; d, Sixth limb; e, Seventh limb. f, Paragnaths of male. Scale at upper right for a–e. Scale in mm.

in the male. The distal segment has 2 slim claw-like setae and a shorter bare seta, as in the fifth limb.

Seventh limb (Fig. 5e): This bears 2 setae, the shorter ¼ the length of the longer.

Furca (Fig. 4k): As in the male, the 4th and particularly the 5th claws are noticeably curved, and there is no single unpaired bristle.

Remarks.—*Conchoecia convexa* agrees most closely with the members of the *Procera* Group, which includes *C. procera*, *C. microprocera*, *C. macroprocera*, *C. decipiens*, and possibly *C. vitjazi* and *C. brachyaskos* (Angel, 1971). Although differing in the shape of the shell and in the locations of the asymmetrical glands, it agrees with the members of this group in other respects. The female frontal organ is unsegmented and extends well beyond the end of the 1st antenna; the female 1st antenna is also similar, and lacks a dorsal seta, as in females of the *Procera* Group. The capitulum of the male frontal organ resembles that of males of the *Procera* Group in its shape, and in having 2 longitudinal rows of long hairs on the proximal ventral surface. Although the teeth alternate instead of being evenly paired, the armature of the male principal seta of the 1st antenna is similar, consisting of long slim teeth; also, as in most members of this group, the secondary setae are almost as long as the principal seta. The incisor surface of the basale of the mandible is identical, and the coxal tooth rows are apparently very similar. The setation of the endopodite of the maxilla is identical. As in other members of the *Procera* Group, there is no single unpaired bristle on the caudal furca. In size, *C. convexa* is larger than *C. procera*, *C. microprocera*, *C. macroprocera* and *C. decipiens*, which range from 0.8–1.4 mm in length. It is about similar in size to the larger deep-water specimens of *C. brachyaskos* from the Southern Hemisphere (Müller, 1906; Deevey, 1968, 1974), and smaller than *C. vitjazi*, which, according to Rudyakov (1962), is 2.2–2.3 mm long.

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Footnote

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